STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

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DIRECTOR

August 16, 2018

VIA E-MAIL and U.S. MAIL

Mr. Shannon Johnson, PE
Senior Manager, Remediation – Environmental Engineering, Environmental Affairs
Georgia-Pacific LLC
133 Peachtree Street, NE
Atlanta, Georgia 30303

Dear Mr. Johnson:

SUBJECT: Michigan Department of Environmental Quality (MDEQ) Comments for Operable Unit 5 (OU5) Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Area 5 Draft Phase 1 Field Sample Plan (FSP) Report, dated July 13, 2018, Prepared by Wood Environment & Infrastructure Solutions, Inc. (formerly Amec Foster Wheeler, Environment & Infrastructure, Inc.)

The MDEQ appreciates the ongoing discussions and collaboration between all parties and the commitment to addressing concerns and questions from the MDEQ while developing the Phase 1 FSP. The MDEQ supports and acknowledges the United States Environmental Protection Agency's (USEPA) approval of this document on August 8, 2018. The detailed comments from the MDEQ regarding the report are provided to help inform and guide the investigation process as it moves forward through Phase 1 and into planning for Phase 2, facilitate future discussions and collaborative work group sessions and, ultimately, for consideration during the development of the Remedial Investigation (RI) Report. A brief summary of the enclosed detailed comments is provided below:

- If a combination of technologies is used for surveying (e.g. LIDAR and sonar), whenever practical, surveys should be scheduled to minimize any time lag between the two (i.e., have a "single" snap shot in time).

- The MDEQ notes that, consistent with other decision documents from other upstream Area's of OU5, dioxins and furans (D/F) have been identified as a secondary contaminant of concern and a preliminary remediation goal for exposure to D/F was established to protect local residents from exposure to concentrations that may cause a carcinogenic risk greater than 10^-5 or a Hazard Index greater than 1.

- In addition to PCBs, Area 5 soil/sediments should also be sampled and analyzed for D/F at a density sufficient to determine their distribution in the Area. As evidenced by recent Area 4 analyses, there is no certainty that D/F are co-located with PCBs. The MDEQ is happy to engage with the USEPA, the Potentially Responsible Parties, and their respective consultants on this topic during future workgroup meetings.

- The bedform classification approach does not account for or describe the heterogeneity and distribution of deeper, buried sediments that may be contaminated and mobilized by

erosion under a dam-out scenario. This is particularly important for the impounded lake section since it contains a large volume of fine, soft sediment.

- The document discusses the long-term stability and consistency of Area 5; however, banks showed significant erosion during the tour on May 7. Aerial images show the formation and erosion of island features throughout time in the impounded lake and sediment cores collected from within the impounded lake show large vertical changes in grain size. This should be considered and discussed during future work group meetings as data from the Phase 1 and Phase 2 FSP is analyzed and incorporated into the Area-specific conceptual site model developed in the RI Report.

The detailed comments in the associated enclosure cover the key issues identified by the MDEQ review team. The MDEQ appreciates the opportunity to participate in the collaborative sessions, site visits, teleconferences, and work group meetings leading up to the submission of the Phase I FSP, and to have reviewed and commented on this document.

If there are any questions in regard to the MDEQ's comments related to the review of the document, please contact me at 517-284-5072; peabodyd@michigan.gov; or MDEQ, Remediation and Redevelopment Division, P.O. Box 30426, Lansing, Michigan 48909-7926.

The MDEQ looks forward to continued progress for Area 5.

Sincerely,

Daniel Peabody
Environmental Quality Analyst
Site Assessment and Site Management Unit
Superfund Section
Remediation and Redevelopment Division
517-284-5072

Enclosure

cc/enc: Mr. James Saric, USEPA
Ms. Cynthia Draper, Wood
Mr. Jeff Keiser, Jacobs
Ms. Carrie Kempf, Wood
Mr. Scott Kirchner, CDM Smith
Mr. Mark Mills, Michigan Department of Natural Resources
Dr. Keegan Roberts, CDM Smith
Mr. David Kline, MDEQ
Mr. Joe Walczak, MDEQ
Ms. Beth Place, MDEQ

Document:		Area 5 Draft Phase I Field Sampling Plan Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Operable Unit 5 dated August 16, 2018		
Comment Author:		MDEQ		
Comment #	**Page**	**Section and paragraph**	**If applicable, specific quotation from text**	**Comment**
General Comments				
1.	---	---	---	MDEQ acknowledges that EPA provided approval of the Area Draft Phase I Field Sampling Plan on August 8, 2018. MDEQ is providing these comments to help inform and guide the investigation process as it moves forward through Phase 1 and into planning for Phase 2.
2.	---	---	---	In addition to PCBs, Area 5 soil/sediments should also be sampled and analyzed for dioxins/furans at a density sufficient to determine their distribution in the Area. As evidenced by recent Area 4 analyses, there is no certainty that dioxins/furans are co-located with PCBs. MDEQ is happy to engage with EPA, the RPs, and their respective consultants on this topic during future workgroup meetings.
3.	---	---	---	MDEQ appreciates the Area 5 reconnaissance efforts and investigations, and their utility in beginning to develop an area-specific CSM. MDEQ notes that it will reevaluate the conclusions presented in this document after receipt of the Remedial Investigation data (Phases 1 and 2).
Specific Comments				
4.	2-2	2.1 Recon I 1st paragraph	The Recon I Tech Memo presented topographic/bathymetric survey results which were used to develop a high (1-foot) resolution, combined digital elevation model (DEM).	The 1 -foot resolution in the topographic surveys could impact the hydrodynamic modeling results, and consequently the resulting site boundary. MDEQ would like to know if any sensitivity analyses were conducted to determine if the 1-foot resolution topographic surveys impacted the extent of flooding determined by the hydrodynamic model. MDEQ is happy to engage with EPA, the RPs, and their respective consultants on this topic during future workgroup meetings.
5.	2-5	2.2.4 Core Processing 2nd paragraph	Samples collected below Interval 5 were held by the laboratory and were released for analysis if results of the preceding interval exceeded 0.33 milligram per kilogram (mg/kg) total PCBs.	This statement implies that there is an expected vertical gradient or pattern in contaminant concentrations and does not acknowledge that depths below interval 5 may exceed 0.33 mg/kg. This consideration should be incorporated into future Area 5 investigations, particularly in those locations where, under a dam out scenario, deeper, buried sediments may be mobilized by erosion.
6.	2-6	2.2.6 Water Level Monitoring	Wood hydrologists recommended repair of the 26th Street transducer and installation of a third pressure transducer to collect additional water level data at the Bridge Road bridge.	MDEQ would like to discuss if the transducer repairs required any corrections to be applied to the collected data during future workgroup meetings.
7.	3-1	3.1.1 Upstream Boundary of Impounded Lake 1st paragraph	The boundary may be further refined after completion of the Phase I data evaluation.	MDEQ would like to discuss what Phase I data will be used to refine the boundary (e.g., PCB concentrations, hydrodynamic information, etc.) during future workgroup meetings.
8.	3-2	3.1.3 Sediment Texture and Particle Size Distribution	--	The particle size distribution (PSD) curves generated for samples not sent to the SedImaging lab and based on USCS classifications lab may lead to subjective results and this needs to be acknowledged and discussed in the Remedial Investigation Report. MDEQ would like to collaboratively discuss and weigh the potential negative and positive outcomes of implementing alternative technologies (e.g. SedImaging) or new data analysis methods (e.g. PSD curves based on USCS classifications and SedImaging results) that are proposed in future Field Sample Plans or Reports prior to their implementation.
9.	3-3	3.1.4 Lithology 1st paragraph	Review of Recon II sediment logs for the impounded lake cores indicates varying degrees of lithologic heterogeneity both within a single core and between cores (Appendix B).	MDEQ would like to discuss the potential causes of the observed vertical heterogeneity during future workgroup meetings.
10.	3-5	3.2.3 Sediment Texture and Particle Size Distribution 1st paragraph	The remaining were either clearly fine, clearly coarse, were consistent with adjacent intervals analyzed by SedImaging, or were not analyzed by SedImaging due to time constraints.	MDEQ would like to discuss the use (or non-use) of SedImaging going forward, given the observed difficulties, during future workgroup meetings.

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11.	4-1	4.1 Step 1 – State the Problem. Preliminary Conceptual Site Model. 1st paragraph	Area 5 CSM differs from upstream Areas for the main reason that the downstream Allegan City Dam has not been lowered and, therefore, lacustrine sediment containing PCBs is not present on the floodplains.	MDEQ notes that Allegan City dam may be lowered or removed in the future, and this consideration should be incorporated into RI and FS planning and documents. MDEQ is happy to engage with EPA and the RPs and their respective consultants on this topic during future workgroup meetings.
12.	4-2	4.1 Step 1 – State the Problem. Preliminary Conceptual Site Model. Floodplain 1st bullet point	Mature vegetation suggests that the banks are generally stable.	MDEQ understands that Wood recently re-surveyed erosion pins installed along the banks of Area 5. MDEQ would also like to discuss the results of this survey during future workgroup meetings.
13.	4-4	4.2 Step 2 – Identify the Goal of the Study. Decision Statements. Last bullet point	Provide a sample set that may also be analyzed for congeners of dioxin/furan (D/F) and dioxin-like PCB compounds (DLCs).	MDEQ would like to discuss how the sample set for dioxins, furans, and dioxin-like compound analyses will be determined during future workgroup meetings.
14.	4-5	4.3 Step 3 – Identify Information Inputs. Establish Action Levels.	---	MDEQ notes that the downstream end of Area 5 is a quiescent, low energy environment, and that the exposure scenarios developed for upstream, high energy river reaches may not necessarily be applicable here. MDEQ is happy to engage with EPA, the RPs, and their respective consultants on this topic during future workgroup meetings.
15.	4-6	4.5 Step 5 – Develop the Analytical Approach	--	MDEQ notes that, consistent with other upstream Area's of Operable Unit 5, a preliminary remediation goal for exposure to D/F may be necessary protect local residents from exposure to concentrations that may cause a carcinogenic risk greater than 10^-5 or a Hazard Index greater than 1.
16.	4-7	4.6 Step 6 – Specify Performance of Acceptance Criteria. Priority 1. 2nd bullet point	Survey data accuracy to +/- 1 foot horizontal and +/- 0.1 foot vertical (as allowed by field conditions).	MDEQ notes that, whenever practical, LIDAR and bathymetric surveys should be scheduled to minimize any time lag between the two (i.e., have a "single" snap shot in time).
17.	4-7	4.6 Step 6 – Specify Performance of Acceptance Criteria. Priority 2. 2nd bullet point	The differences in PCB concentrations in varying bedform classifications are statistically significant to: 1) be useful for optimizing the remedial design sampling and implementation; and 2) predict distribution patterns in future RIs downstream of Area 5.	MDEQ notes that the patterns of contaminant distribution downstream of Area 5 may not be analogous to what is observed in Area 5 and drawing such conclusions may erroneously inform our understanding of contaminant distributions as we move downstream.
18.	5-3	5.3 Floodplain Soil Sampling 2nd paragraph	Small, discontinuous areas distal from the channel were also excluded from the polygon because these areas were associated with tributary drainage and not floodplain processes of the Kalamazoo River.	MDEQ notes that these drainages will likely have to be investigated at some point due to their hydraulic connection with the river. MDEQ is happy to engage with EPA and the RPs and their respective consultants on this topic during future workgroup meetings.